

Population Growth Lesson 1

Exploring Population Growth

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LENGTH OF LESSON:

SUBJECT: Algebra

SOURCE OF THE LESSON:

<http://www.k12science.org/curriculum/popgrowthproj/index.html>

TEKS:

CONCEPT(S)

OBJECTIVES (LEARNER OUTCOMES): The student will be able to

- 1- Compare weekly increases in world population to population estimates of local area.
- 2- Determine if historical events had any influence on world population.
- 3- Identify regions of the world that have had significant population growth in the last decade and speculate on reasons for this.

MATERIALS LIST and ADVANCED PREPARATIONS:

A computer for every group of 2-3 students

SAFETY:

No foreseen safety issues

SUPPLEMENTARY MATERIALS:

All supplementary materials are online at

<http://www.k12science.org/curriculum/popgrowthproj/activities.html>

or the mirror site

<http://www.k12science2.org/curriculum/popgrowthproj/activities.html>

Engagement (5 min)

What the Teacher Will Do	Eliciting Questions	Student Responses
<p>The video about population is shown with discussion about the historical periods mentioned and what could cause the changes in the population.</p>	<p>What do you notice about the population changes?</p> <p>Does the population ever decrease? When? What caused it?</p> <p>Where is population growth a problem?</p> <p>What can we gain by understanding how population grows?</p>	<p>Constant for first 1000 years or so then increases fast.</p> <p>During the black plague the population decreases.</p> <p>Africa, China, other developing countries.</p> <p>Allocation of resources, understanding pollution, control of disease...</p>

Exploration (60 min.)

What the Teacher Will Do	Eliciting Questions	Student Responses
<p>Teacher will instruct students on how to set up an online blog for each group.</p> <p>See handout with instructions on how to set up a blog.</p> <p>Explain plagiarism and that copying someone's work in part or in whole is considered plagiarism and will result in a 0.</p>		<p>Students will set up a free google account as a group (even if they already have one). And follow the instructions on how to set up a blog.</p>
<p>Will instruct students where to access the activities that the students will complete in groups of 2-3 people.</p>		<p>Students will begin Activity #1 and Activity #2 online at the "Population Growth" website under the "Student Activities"</p> <p>Once completed Students will write an entry into their blog answering the major questions and posting their results. This should be formatted as a blog</p>

What the Teacher Will Do	Eliciting Questions	Student Responses
	<p>Using the clock how can we see how the population changes in a minute?</p> <p>How does the US population change compare to world population change?</p> <p>What do these numbers represent?</p> <p>What are some influences in a decreasing population?</p> <p>How do we want our equation to look?</p> <p>On the Summary of Demographic Data why are there more people in the categories above the age of 60 in 2025 than in 2005?</p>	<p>entry.</p> <p>The clock is updated every minute, so we can record a number and then wait for it to change and take the difference.</p> <p>The US population change is about 5 people per minute and the World population change is 146 people per day.</p> <p>These are approximations since there is no way to actually count all of the people in the world.</p> <p>War, disease, infertility.</p> <p>We want to be able to plug in a birth rate and a death rate and have formula that tells us the overall growth rate.</p> <p>The baby boomers will be reaching those age groups.</p>

Explanation (5 min)

What the Teacher Will Do	Eliciting Questions	Student Responses
<p>Lead a discussion about population growth</p>	<p>What did we discover about population growth today?</p>	<p>Birth rate, death rate, fertility rates, and life expectancy affect population growth</p>

Elaboration (5 min)

What the Teacher Will Do	Eliciting Questions	Student Responses
Lead a discussion about current affairs and how they could impact population growth.	What current situations could impact population growth	Darfur, The War in Iraq, AIDS, Avian Bird flu,

Evaluation (30 min)

What the Teacher Will Do	Eliciting Questions	Student Responses
Student blog entries can be used to evaluate their work. Mainly looking for the formulas that express growth rate.		Students Post a blog entry about each completed activity. Posting any further questions they may have or any opinions they may have about world population change.